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Wael Diab

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EXAMINER

SCHUBERT, KEVIN R

ART UNIT

PAPER NUMBER

2137

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/927,999		DIAB ET AL.	
	Examiner		Art Unit	
	Kevin Schubert		2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/1/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-12,15-19 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-12,15-19 and 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claims 1-3,6-12,15-19, and 22-26 have been considered. Examiner has carefully considered applicant's remarks, filed 12/27/05, but still maintains the rejections presented in the previous action. A Response to Arguments section concludes this action.

5

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

10

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15

Claims 1-3,6-7,10-12,15-16,19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walmsley, U.S. Patent No. 6,816,968, in view of Gormish, U.S. Patent No. 6,073,118.

20

As per claims 1,10,19, and 22, the applicant describes a method for verifying that a module is from an approved vendor comprising the following steps which are anticipated by Walmsley in view of Gormish:

a) obtaining vendor data and a first magic code from a module (Walmsley: Col 24, lines 55-60);

b) generating a second magic code based on the vendor data (Walmsley: Col 24, lines 61-63);

25

c) outputting a magic code valid signal when the second magic code matches the first magic code, and a magic code invalid signal when the second magic code does not match the first magic code (Walmsley: Col 24, lines 65-67; Col 25, lines 1-5);

d) forming the second magic code based on the module serial number (Walmsley: Col 55, lines 3-6);

30

e) obtaining a second serial number from a second module (Walmsley: Col 55, lines 3-6);

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f) outputting a serial number valid signal when the module serial number of the vendor data does not match the second serial number from the second module, and a second serial number invalid signal when the serial number of the vendor data matches the second serial number from the second module (Gormish: Col 6, lines 32-49);

5 Walmsley discloses a system in which a module such as a printer cartridge is installed in a printer and authentication tests are performed on the module to compute a first magic code (parts a through c). Walmsley also discloses that the printer cartridge sends a message which includes a serial number with the generated first magic code. The message is encrypted to form a second magic code (part d), and the second magic code is compared with the first magic code generated at the untrusted module. If another
10 module, such as a second print cartridge, is installed in the Walmsley system a second serial number would be obtained from the second module and authentication of the second module would proceed in the same manner as the authentication of the first module.

Walmsley, however, does not disclose part f. Though Walmsley discloses that a serial number is received at the authentication site and serial numbers of different modules should be different (Col 55,
15 lines 3-6), he provides no means for checking to make sure that the serial number has not been used before as disclosed in part f.

Gormish discloses the idea of keeping a log of received serial numbers, checking to make sure a serial number has not been received before, and sending a confirmation signal based on the check. Combining the ideas of Gormish with Walmsley allows for the serial number received at the authentication
20 site to be checked to confirm uniqueness as desired by Walmsley (Col 55, lines 3-6). It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Gormish with those of Walmsley in the case where a module, such as a printer cartridge, can only be installed once in a system. This would be advantageous in a system because it would prevent a user from manipulating a print cartridge (ie taking it out and using it in another machine) since a user would
25 only be able to install a print cartridge once.

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As per claims 2,7,11, and 16 the applicant describes the method of claims 1,6,10, and 16, which are anticipated by Walmsley in view of Gormish, with the following additional limitations that are met by Walmsley:

a) reading the magic key from the memory of the computerized device (Col 24, lines 61-63);

5 b) forming the second magic code based on the magic key and the vendor data (Col 24, lines 61-63);

The applicant should note that both the trusted authentication chip, which generates the second magic code, and the untrusted authentication chip, which generates the first magic code, both have two secret keys stored in memory. The second secret key (magic key) is used to generate the first and
10 second magic codes.

As per claims 3 and 12, the applicant describes the method of claims 2 and 11, which are anticipated by Walmsley in view of Gormish, with the following additional limitation which is also met by Walmsley:

15 Performing a message-digest algorithm operation on the magic key and the vendor data (Col 38, lines 53-63; Fig 6);

Fig 6 illustrates an embodiment of the invention where the chip being authenticated sends the vendor data (M) and the first magic code ($Sk_2 [R | M]$) to the trusted chip (63 of Fig 6). The applicant should note that the first magic code is a signature algorithm as described in Col 38, lines 53-63. A
20 signature algorithm is a message-digest algorithm with encryption. A variety of hash, or digest, algorithms which can be used are described in the Background to the Invention by Walmsley and the Summary of the Invention (Col 25, lines 31-36).

As per claims 6 and 15, the applicant describes the method of claims 1 and 10, which are
25 anticipated by Walmsley in view of Gormish, with the following additional limitation which is also anticipated by Walmsley:

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Forming the second magic code based on the vendor identification number, the character string representing the vendor name, and the module serial number (Col 24, lines 61-63; Col 55, lines 3-6);

As per claims 8,9,17, and 18, the applicant describes the method of claims 1 and 10, which are anticipated by Walmsley in view of Gormish, with the following additional limitation:

a) reading the vendor data from the non-volatile memory of the small form factor pluggable component (Walmsley: Col 24, lines 56-64; Col 26, lines 36-43);

Walmsley in view of Gormish disclose a device which is authenticated. Walmsley in view of Gormish, however, do not disclose that the device is particularly a small-form factor pluggable device. The examiner takes official notice because it is well-known that a small-form factor pluggable device can be authenticated.

Claims 1,10,19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walmsley in view of Sekiya, U.S. Patent No. 6,484,128.

15

As per claims 1,10,19, and 22, the applicant describes a method for verifying that a module is from an approved vendor comprising the following steps which are anticipated by Walmsley in view of Sekiya:

- a) obtaining vendor data and a first magic code from a module (Col 24, lines 55-60);
- b) generating a second magic code based on the vendor data (Col 24, lines 61-63);
- c) outputting a magic code valid signal when the second magic code matches the first magic code, and a magic code invalid signal when the second magic code does not match the first magic code (Col 24, lines 65-67; Col 25, lines 1-5);
- d) forming the second magic code based on the module serial number (Col 55, lines 3-6);
- e) obtaining a second serial number from a second module (Col 55, lines 3-6);
- f) outputting a serial number valid signal when the module serial number of the vendor data does not match the second serial number from the second module, and a second serial number invalid signal

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when the serial number of the vendor data matches the second serial number from the second module (Sekiya: Col 7, line 37 to Col 8, line 67);

Walmsley discloses all the limitations of parts a through e. However, Walmsley does not disclose the particulars of part f. Sekiya discloses a module authentication system in which a plurality of modules
5 are authenticated as being from approved vendors based on vendor identification data such as version numbers (serial numbers) and vendor names which are received from the modules. When a module is installed, the vendor data is obtained from the module and sent to an approval site where the vendor name and version number (serial number) are compared to stored data on similar modules in the system which have been known to cause problems. If a match occurs, the system transmits a fail signal (see Fig
10 20) so that a new module can be installed.

For example, if a new module is installed which has version number 1234 and is from company A, the vendor data is obtained and compared to stored vendor data to see if there is a history of a problem with that module. If the version number and company name of the module have been logged as having problems, the system transmits a fail signal (see Fig 20) and requests that a module from another
15 vendor be installed. If the version number and the company name of the module have not been logged as having problems and no match is found, the module is valid.

It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Sekiya with those of Walmsley in the case where a particular module (such as a color cartridge from company A should not be installed because there is logged record of problems with
20 the module.

Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walmsley in view of Gormish in further view of Menezes (Menezes, Alfred J. Handbook of Applied Cryptography. CRC Press. Washington DC. 1997. page 363) in further view of Sekiya.

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As per claims 23-26, the applicant describes the method of claims 1, 10, 19, and 22, which are met by Walmsley in view of Gormish, with the following limitations which are met by Walmsley, Gormish, Menezes, and Sekiya:

a) the module are respective first and second communications transceivers (Walmsley: Col 92, lines 24-25);

b) the vendor data and the first magic code are obtained from a non-volatile memory in the first communications transceiver component (Walmsley: Col 24, lines 55-60);

c) the vendor data includes data from a vendor name field, a vendor identification number field, and an error-checking field (Walmsley: Col 55, lines 3-6; Sekiya: Col 5, lines 43-52; Menezes: page 363);

d) the generating and outputting steps are performed as part of a magic code verification routine upon successful completion of an error-checking routine performed on the vendor data (Menezes: page 363);

e) performing the error-checking routine on the vendor data (Menezes: page 363);

f) if during the magic code verification routine the first magic code does not match the second magic code, then identifying the first communications transceiver component as not being from an approved vendor (Walmsley: Col 24, line 65 to Col 25, line 5);

g) if during the magic code verification routine the first magic code does match the second magic code, then repeating the preceding steps and the steps of claim 1 for the second communications transceiver component (Sekiya: Col 11, lines 3-17; Walmsley: Col 24, line 65 to Col 25, line 5);

h) the serial number valid signal indicates that the first communications transceiver component has been identified as being from an approved vendor (Gormish: Col 6, lines 33-49);

i) the serial number invalid signal indicates that the first communications transceiver component has been identified as not being from an approved vendor (Gormish: Col 6, lines 33-49);

j) the step of outputting the serial number valid signal and serial number invalid signal is performed only if the first magic code matches the second magic code during the magic code verification routine for both the first and second communications transceiver components (Gormish: Col 6, lines 33-49);

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Walmsley in view of Gormish do not disclose that the vendor data contains an error-checking field. Menezes discloses the use of an error-checking field such as a CRC checksum. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Menezes with those of Walmsley in view of Gormish because doing so prevents unnecessary errors in the vendor data.

Walmsley in view of Gormish in further view of Menezes do not disclose that the vendor data contains a name field. Sekiya discloses the use of a module having a vendor-name field. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Sekiya with those of Walmsley in view of Gormish in further view of Menezes because doing so provides a further means to recognize and authenticate a vendor module.

Response to Arguments

Applicant's arguments, filed 12/27/05, with respect to the 103(a) rejection of claim 1 under Walmsley in view of Gormish have been fully considered but they are not persuasive. Applicant argues the following:

1) motivation

Examiner respectfully disagrees with the argument above. More specifically, Applicant argues that there is no motivation to combine Gormish with Walmsley because the combination would only add to the system's complexity and would not provide commensurate benefit. According to Applicant, it should be appreciated that if a manufacturer of clone consumables were to be able to completely duplicate an authentication chip, it would mean that the clone manufacturer could duplicate the keys as well as the encryption/decryption algorithms. In the face of that kind of cloning scenario, the printer manufacturer would have no reason to believe that it can detect clones by comparing serial numbers, because it could not be assumed that the clone manufacturer would use duplicate serial numbers (and in fact a smart clone manufacturer in this position would not). From the above remarks, Applicant thus

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concludes that there would be no motivation to combine Gormish and that the combination would thus only add to system complexity (Remarks: page 4).

Examiner respectfully submits that Applicant appears to be arguing against a motivation Examiner never cited. Examiner does not contend that the motivation for combination would be to prevent a clone manufacturer from creating various authentication chip clones, let alone the depth of detail applicant has provided that the combination is somehow meant to confront a clone manufacturer which has the specific potential to make identical clones with identical keys and identical encryption/decryption algorithms.

In contrast, the motivation provided by Examiner was that the combination would make the system more robust by preventing re-use in another environment. This motivation is clearly different from the motivation Applicant appears to be arguing against. Examiner even provided some sidenote comments in the previous action as to situations in which this might be useful. The combination, for example, would prevent the possibility of a module being taken out and used in another machine (thereby deterring theft, etc). Accordingly, Applicant's arguments are moot in that they do not argue against a motivation which was not presented.

Applicant's arguments with respect to the 103(a) rejection of claim 1 under Walmsley in view of Sekiya have been fully considered but they are not persuasive. Applicant argues the following:

- 1) Sekiya's module version number does not qualify as a serial number

Examiner respectfully disagrees with the argument above. More specifically applicant argues that Sekiya's module version number is only unique to a module "version", and is not unique to an individual module (See Remarks page 5). Thus, applicant appears to be arguing that more than one module may not have the same serial number. Examiner respectfully disagrees with this argument.

It appears that there is no limitation in claim 1 which precludes more than one module from having the same serial number. Further, an Internet search for the definition of the term "serial number" revealed the following:

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Serial number

"Sometimes abbreviated as 'sn' or 's/n' a serial number is a number commonly used with computers, computer hardware, and software products. **Serial numbers are used as an identification number and are almost always unique and given to each product or a group of products that are**

5 **each identical"** (www.computerhope.com/jargon/s/serinumb.htm).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

10 A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

15 the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Schubert whose telephone number is (571) 272-4239. The examiner can normally be reached on M-F 7:30-6:00.

20 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should
5 you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KS

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